



Joseph C. Foti
Director

City of Chelsea
DEPARTMENT OF PUBLIC WORKS
City Hall, 500 Broadway, Room 310
Chelsea, Massachusetts 02150

Telephone: (617) 466-4200
Fax: (617) 466-4210

United States Environmental Protection Agency
Water Protection Unit
P.O. Box 8127
Boston, Massachusetts 02114

May 14, 2007

RE: NPDES Stormwater Phase II Annual Report

To Whom It May Concern:

Please find sent one (1) copy of the City of Chelsea's 2005 Annual Report for NPDES Phase II General Permit.

If you have any questions regarding this matter, please contact me directly at 617-466-4206.

Sincerely,

A handwritten signature in black ink, reading "Andrew B. DeSantis".

Andrew B. DeSantis,
Assistant Director

Municipality/Organization: City of Chelsea

EPA NPDES Permit Number: MAR041077

MassDEP Transmittal Number: W-

**Annual Report Number
& Reporting Period:** April 1, 2006 – March 31, 2007

NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2007)

Part I. General Information

Contact Person: Andrew B. DeSantis **Title:** Assistant Director DPW

Telephone #: 617-466-4206 **Email:** adesantis@chelseama.gov

Mailing Address: Department of Public Works Room 310, 500 Broadway, Chelsea, MA 02150

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: 

Printed Name: Jay Ash

Title: City Manager

Date: April 30, 2007

Part II. Self-Assessment

The City of Chelsea has completed the required Self-Assessment and has determined that our municipality is in compliance with all permit conditions except for the following provisions:

Part IIB.6(a) Employee training component not included in NOI.

Part II. F Failed to submit annual report on or before May 1st. Submitted on May 14, 2007.

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
PE-1	Partnership Program with Chelsea Greenspace and Mystic River Watershed Organization	DPW/Andrew B. DeSantis	Conduct Public Forums on a yearly basis	Public Forum held with Chelsea Conservation Commission and Mystic River Watershed Organization	Stakeholders meeting to be held June 2007
Revised					
PE-2	Educational Material Distribution	DPW/Andrew B. DeSantis	Distribute materials 2X per year at community events	Information materials maintained on public stand in City Hall Corridor. City of Chelsea Stormwater webpage updated. http://www.chelseama.gov/public_documents/ChelseaMA_DPW/stormwater	Distribute materials 2X per year at community events.
Revised					
PE-3	Outreach to Latino Community	DPW/Andrew B. DeSantis	Develop Spanish Language Brochure within 1 year	Spanish Version of MWRA 's Healthy Environment Starts at Home Brochure maintained on public stand in City Hall Corridor.	Develop Spanish Language Brochure particular to Chelsea.
Revised					

1a. Additions

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
PP-1	Hold Co-ordination meetings	DPW/Andrew B. DeSantis	Hold Co-ordination meetings with Chelsea Greenspace and Mystic River Watershed Organization on a semi-annual basis.	Co-ordination meetings held during the past year with Chelsea Greenspace and Mystic River Watershed Organization for Find It and Fix It campaign and Shoreline Survey.	Hold Co-ordination meetings with Chelsea Greenspace and Mystic River Watershed Organization on a semi-annual basis.
Revised					
PP-2	Storm Drain Stenciling	DPW/Andrew B. DeSantis	Stencil all catch basins within 3 years	200 stenciled year 4	Stencil remaining catch basins in MS4 area.
Revised					
PP-3	Volunteer Monitoring	DPW/Andrew B. DeSantis	Continue volunteer monitoring on an annual basis	Mystic River Watershed Organization monitoring every 3 months	Continue monitoring
Revised					
PP-4	Stakeholders Meetings	DPW/Andrew B. DeSantis	Hold annual stakeholder meeting	As noted above	Hold annual stakeholder meeting
Revised					
Revised					
Revised					

2a. Additions

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3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
IDDE-1 Revised	Storm Drain Map	DPW/Andrew B. DeSantis	Update Storm Drain/Sanitary Sewer Map yearly (ongoing)	Storm Drain Map updated October 2006. GPS locations of all storm drain outfalls obtained.	Update Storm Drain/Sanitary Sewer Map October 2007
IDDE-2 Revised	Non-stormwater discharge ordinance	DPW/Andrew B. DeSantis	Adopt Non-stormwater discharge ordinance within 2 years	Partially completed within current ordinance	Complete update of ordinance
IDDE-3 Revised	Industrial/Business Connections	DPW/Andrew B. DeSantis	Establish monitoring program within 2 years	Dry-weather and wet weather sampling at all outfalls occurring on an annual basis.	Continue monitoring activities
IDDE-4 Revised	Illicit Discharge Detection and removal	DPW/Andrew B. DeSantis	Establish program within one year	Dry-weather and wet weather sampling at all outfalls occurring on an annual basis.	Continue monitoring activities
Revised					
Revised					

3a. Additions

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
CSRC-1 Revised	Develop Storm Water Permitting Procedures	DPW/Andrew B. DeSantis	Establish permitting standards within one year	Informally commenced with developments/redevelopments. Information gathering ongoing	Formalize permitting procedures
CSRC-2 Revised	Erosion sediment control ordinance	DPW/Andrew B. DeSantis	Develop ordinance within one year	Information gathering ongoing	Complete by year end year 5
CSRC-3 Revised	Inspection Program Guidelines	DPW/Andrew B. DeSantis	Establish within one year	Not started	Complete by year end year 5
Revised					
Revised					
Revised					
Revised					

4a. Additions

5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
PCRC-1	Post construction ordinance	DPW/Andrew B. DeSantis	Develop within 1 year	Not started	Complete by year end year 5
Revised					
PCRC-2	Operation and maintenance agreement	DPW/Andrew B. DeSantis	Develop within 1 year	Operation and Maintenance plan required on any new development/redevelopment	Formalize requirements and form by year end year 5
Revised					
PCRC-3	Inspection program guidelines	DPW/Andrew B. DeSantis	Setup inspection program for post construction runoff within 2 years	Not started	Complete by year end year 5
Revised					
Revised					
Revised					
Revised					

5a. Additions

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
MGH-1	Street sweeping	DPW/Andrew B. DeSantis	Continue ongoing program of street sweeping each street twice a month between April 1 and November 30	Ongoing	Continue program
Revised					
MGH-2	Programmed catch basin cleaning	DPW/Andrew B. DeSantis	Continue ongoing catch basin cleaning at the rate of cleaning 33% of all catch basins per year	500 catch basins cleaned year 4	Clean 500 catch basins year 5
Revised					
MGH-3	Spill response and prevention	DPW/Andrew B. DeSantis	Review existing response plan and update within 1 year	Not started	Complete by year end year 5
Revised					
Revised					
Revised					

6a. Additions

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
TMDL-1	Streetsweeping	DPW/Andrew B. DeSantis	Continue ongoing program of street sweeping each street twice a month between April 1 and November 30	Ongoing	Continue program
Revised					
TMDL-2	Catch basin cleaning	DPW/Andrew B. DeSantis	Continue ongoing catch basin cleaning at the rate of cleaning 33% of all catch basins per year	500 catch basins cleaned year 4	Clean 500 catch basins year 5
Revised					
TMDL-3	Deep sump catch basins	DPW/Andrew B. DeSantis	Require all new catch basins to be off deep sump construction	All new catch basins in developments/redevelopments are required to be deep sump construction	Codify into storm water ordinance
Revised					
TMDL-4	Oil and gas separators	DPW/Andrew B. DeSantis	Institute requirement in conjunction with BMP CSRC-1	Catch basins at all new developments/redevelopments to have oil and gas separators	Formal adoption of requirements to be codified into storm water ordinance
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

Dry weather and wet weather sampling data results attached to report.

Part V. Program Outputs & Accomplishments (OPTIONAL)

(Since beginning of permit coverage unless specified otherwise by a **, which indicates response is for period covering April 1, 2006 through March 31, 2007)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	
Annual program budget/expenditures **	(\$)	
Total program expenditures since beginning of permit coverage	(\$)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	
Stormwater management committee established	(y/n)	
Stream teams established or supported	(# or y/n)	
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	1
▪ community participation **	(# or %)	
▪ material collected **	(tons or gal)	.5T
School curricula implemented	(y/n)	N

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Legal/Regulatory

	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
Regulatory Mechanism Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination		X			
▪ Erosion & Sediment Control		X			
▪ Post-Development Stormwater Management		X			
Accompanying Regulation Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination		X			
▪ Erosion & Sediment Control		X			
▪ Post-Development Stormwater Management		X			

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	100
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100
Outfalls inspected/screened **	(# or %)	100
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	100
Illicit discharges identified **	(#)	3
Illicit discharges identified (Since beginning of permit coverage)	(#)	3
Illicit connections removed **	(#); and (est. gpd)	3
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	3

% of population on sewer	(%)	100
% of population on septic systems	(%)	0

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	
Site inspections completed **	(# or %)	
Tickets/Stop work orders issued **	(# or %)	
Fines collected **	(# and \$)	
Complaints/concerns received from public **	(#)	0

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	
Site inspections (for proper BMP installation & operation) completed **	(# or %)	
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	
Low-impact development (LID) practices permitted and encouraged	(y/n)	

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	
Qty of structures cleaned **	(#)	500
Qty. of storm drain cleaned **	(%, LF or mi.)	
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Landfill

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	
• Disposal cost**	(\$)	
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	
• Vacuum truck(s) owned/leased	(#)	
• Vacuum trucks specified in contracts	(y/n)	
• % Structures cleaned with clam shells **	(%)	
• % Structures cleaned with vector **	(%)	

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	16
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	214
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Landfill
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$130,000
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	
• Disposal cost**	(\$)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	
• % Roads swept with rotary brush sweepers **	%	
• % Roads swept with vacuum sweepers **	%	

Reduction (since beginning of permit coverage) in application on public land of:
 ("N/A" = never used; "100%" = elimination)

▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	
Integrated Pest Management (IPM) Practices Implemented	(y/n)	

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	
Pre-wetting techniques utilized **	(y/n or %)	
Manual control spreaders used **	(y/n or %)	
Zero-velocity spreaders used **	(y/n or %)	
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	
% of salt/chemical pile(s) covered in storage shed(s)	(%)	
Storage shed(s) in design or under construction	(y/n or #)	
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	
<ul style="list-style-type: none"> Treatment units induce infiltration within 500-feet of a wellhead protection area 	# or y/n	

Table 1
Chelsea, Massachusetts
EPA 308 Letter Response
Wet-weather Stormwater Outfall Summary

Date of Sampling: 10/02/06
Precipitation: 10/01/06; 0.37 inches
Time of Low Tide: 1:23 PM

Location	Inspection & Sampling Data									Sample Results (Note 1)			
	Time	Flow?	Sampler	Odor	Color	Turbid.	Float.	Solids	Comments	Fecal (cfu/ 100ml)	E-coli (cfu/ 100ml)	Surfact. (mg/l)	Ammonia- Nitrogen (mg/l)
Beacham St. & Market St. (IE-3)	10:10 AM	Yes	PCP	None	Clear	None	None	None	--	1700	130	0.7	0.39
Beacham St. & Market St. (IE-5)	10:15 AM	Yes	PCP	None	Clear	None	None	None	--	1200	270	0.5	2.00
Broadway @ Mill Creek	11:00 AM	Yes	PMC	None	Clear	None	None	None	--	800	600	0.3	0.37
CHE-008 Outfall	2:00 PM	Yes	PMC	None	Clear	None	Slight	None	--	10	<10	0.8	0.11
Clark Ave. (behind Walgreens)	10:40 AM	No	--	--	--	--	--	--	--	--	--	--	--
Commandant's Way	1:20 PM	Standing water	--	--	--	--	--	--	--	--	--	--	--
Crescent Ave.	11:35 AM	No	--	--	--	--	--	--	--	--	--	--	--
Eastern Ave. & Central St.	10:55 AM	Yes	PCP	None	Clear	None	None	None	--	370	190	0.5	0.31
Gillooly Rd.	10:50 AM	Yes	PMC	None	Clear	None	None	None	--	170	170	0.3	1.30
Griffin Way	11:09 AM	Yes	PCP	None	Clear	None	None	None	Petroleum odor in vicinity of outfall.	1400	90	0.3	1.00
Locke St. 12"	11:50 AM	Standing water	--	--	--	--	--	--	--	--	--	--	--
Locke St. 24"	11:55 AM	No	--	--	--	--	--	--	--	--	--	--	--
Marginal St. & Eastern Ave.	10:47 AM	Yes	PCP	None	Clear	None	None	None	--	4700	400	0.6	1.60
Route 1 ramp	12:40 PM	Stagnant	--	--	--	--	--	--	--	--	--	--	--
Washburn St. (near Irish Club)	11:15 AM	Yes	PMC	None	Clear	None	None	None	--	450	180	0.2	0.75
Webster Ave. & Revere Beach Pkwy	12:15 PM	Stagnant	--	--	--	--	--	--	--	--	--	--	--
Winnisimmet St.	10:25 AM	Yes	PCP	None	Clear	None	None	None	Sampled from upstream DMH.	30	30	0.2	0.38

Table 1
Chelsea, Massachusetts
EPA 308 Letter Response
Dry-weather Stormwater Outfall Sampling Summary

Location	Receiving Water	Outfall		Tide Infl.	Sample			Analyses (Note 1)			
		Pipe Mat.	Dia. (in)		Date	Sample Time	Sampler	Fecal (cfu/100ml)	E-coli (cfu/100ml)	Surfact. (mg/l)	Ammonia-Nitrogen (mg/l)
Beacham St. & Market St. (IE-3)	Island End	CM	12	Yes	05/01/06	8:50 a.m.	PCP	5	5	1.0	0.44
Beacham St. & Market St. (IE-5)	Island End	CM	12	Yes	05/01/06	8:56 a.m.	PCP	8	8	0.7	4.90
Broadway @ Mill Creek	Mill Creek	RCP	15	Yes	05/01/06	10:17 a.m.	NEM	8	4	0.9	0.79
CHE-008 Outfall	Chelsea River	RCP	48	Yes	05/31/06	9:15 a.m.	PCP	1	11	0.4	0.27
Clark Ave. (behind Walgreens)	Mill Creek	RCP	15	Yes	No dry-weather flow						
Commandant's Way	Island End	RCP	84	Yes	05/25/06	4:54 a.m.	PCP	42	17	0.2	0.29
Crescent Ave.	Chelsea River	RCP	12	Yes	05/01/06	11:06 a.m.	NEM	2	1	0.6	0.76
Eastern Ave. & Central St.	Chelsea River	RCP	30	Yes	05/01/06	9:20 a.m.	PCP	4	4	0.7	0.58
Gillooly Rd.	Mill Creek	RCP	24	Yes	05/01/06	9:40 a.m.	NEM	240	28	0.5	2.70
Griffin Way	Chelsea River	CI/DI?	18	Yes	05/25/06	6:12 a.m.	PCP	35	13	0.2	1.5
Locke St.	Mill Creek	RCP	24	Yes	05/31/06	8:36 a.m.	PCP	80	15	0.3	0.15
Locke St.	Mill Creek	RCP	12	Yes	No dry-weather flow						
Marginal St. & Eastern Ave.	Chelsea River	RCP	18	Yes	05/01/06	9:41 a.m.	PCP	1	1	0.5	2.00
Route 1 ramp	Mill Creek	RCP	48	No	No 48" outfall found; possibly 18" RCP below.						
Route 1 ramp	Mill Creek	RCP	18	No	Non-tidal. Standing water in invert of outfall. Unable to sample outfall.						
Washburn St. (near Irish Club)	Mill Creek	PVC	8	Yes	05/01/06	10:30 a.m.	NEM	2,200	<1	0.2	0.61
Webster Ave. & Revere Beach Pkwy	Mill Creek	RCP	24	No	No 48" outfall found; possibly 5' box culvert below.						
Webster Ave. & Revere Beach Pkwy	Mill Creek	RCP	5x? Box	No	Non-tidal. Standing water in invert of outfall. Unable to sample outfall.						
Winnisimmet St.	Mystic River	RCP	30	Yes	05/01/06	10:25 a.m.	PCP	8	Note 2	0.4	0.16

Note 1: For date, time, analyst, and method, please see report from R.I. Analytical.

Note 2: Bottle leaked - insufficient quantity for analysis.